

REMARKS

Examiner William Boddie is thanked for the thorough examination and search of the subject Patent Application.

Claims 1, 30, and 61 have been amended, claims 2 and 31 have been cancelled.

All Claims are believed to be in condition for Allowance, and that is so requested.

9. Reconsideration of the rejection of claims 1-3, 8, 11-15, 17-20, 22-23, 26-32, 37, 40-45, 49-51, 53-54, 57-63, 65, 67-70, 75, 78-84, 86-89, 91-92 and 95-98 under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688), hereinafter Dowling, in view of Colorado (US 7,016,701) is requested, based on amended claims and on following remarks:

The amended Claim 1 of the claimed invention discloses:

1. (currently amended) A system to perform a light show, wherein LED modules are displaying related light beams having defined properties, wherein said properties have been defined prior to performing said light show, is comprising:

an integrated circuit comprising:

an interface to input information about properties of said light beams, wherein said interface is connected to a memory;

said memory to store the information about the properties of said beams to be displayed;

a sequencer to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;

said LED driver unit comprising a driver for each color of said LED modules able to control the intensity of light, wherein the LED driver unit is

connected between said memory and first terminals of said arrangement of at least one LED module; and
an electrical connection between said LED driver unit and said arrangement of at least one LED module; and
said arrangement of at least one LED module.

Applicant respectfully disagrees that Dowling discloses an integrated circuit comprising

“**an interface** to input information about properties of said light beams, wherein said interface is connected to a memory;

said memory to store the information about the properties of said beams to be displayed;

a sequencer to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;

said LED driver unit comprising a driver for each color of said LED modules able to control the intensity of light, wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module; ...”

as the claimed invention does.

In regard of integrated components Dowling suggests an integration of only an processor and a controller, i.e. LED driver (mid of paragraph 54):

“The **processor** 2 and **controller** 3 may be incorporated into one device, e.g., sharing a single semiconductor package.”

It should be noted that Dowling does **neither** includes a **memory** nor an **interface** in his list of integrated components as the claimed invention does.

Furthermore Dowling shows in his **Fig. 1** a processor 2 being connected to an user interface 1 and to a memory 6 via another connection, i.e. there is no direct link

between the interface and the memory, they are connected only via the processor.

Dowling does not disclose a direct connection between user interface and memory as claim 1 of the claimed invention discloses:

“an interface to input information about properties of said light beams, wherein **said interface is connected to a memory**”.

Moreover Dowling discloses in his Fig. 4 controllers 3, i.e. LED drivers, being deployed between processor 2 and LEDs 4. The claimed invention discloses a LED driver unit being deployed between memory and first terminals of the LED modules and a sequencer being connected to second terminals of the LED modules, as claimed in claim 1 of the claimed invention:

said memory to store the information about the properties of said beams to be displayed;

a sequencer to control an LED driver unit, wherein the sequencer **is connected to second terminals of an arrangement of at least one LED module**;

said LED driver unit comprising a driver for each color of said LED modules able to control the intensity of light, wherein the **LED driver unit is connected between said memory and first terminals** of said arrangement of at least one LED module; ...”

Summarizing the above, it should be noted that the deployment of the components of Dowling's invention is very different compared to the claimed invention.

Colorado discloses an apparatus and method for displaying an illumination pattern including a plurality of illumination regions.

It should be noted that Colorado does not disclose an integrated circuit comprising

“**an interface** to input information about properties of said light beams, wherein said interface is connected to a memory;

said memory to store the information about the properties of said beams to be displayed;

a sequencer to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;

said LED driver unit comprising a driver for each color of said LED modules able to control the intensity of light, wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module; ...”

as the claimed invention does. Colorado does not teach the level of integration including an **interface**, memory, sequencer and LED driver as the claimed invention does.

Furthermore Colorado discloses an arrangement of components different to the claimed invention. In his Fig. 4 Colorado discloses an arrangement wherein the processor, which may be comparable to the sequencer of the claimed invention, is deployed between the memory and the illumination regions, wherein the claimed invention discloses an LED driver unit being deployed between memory and first terminals of the LED modules and a **sequencer being connected to second terminals of the LED modules**, as claimed in claim 1 of the claimed invention:

“**a sequencer** to control an LED driver unit, wherein the sequencer **is connected to second terminals of an arrangement of at least one LED module**;

said LED driver unit comprising a driver for each color of said LED modules able to control the intensity of light, wherein the **LED driver unit is connected between said memory and first terminals** of said arrangement of at least one LED module; ...”

None of the applied references address the system of the claimed invention having **integrated on ONE integrated circuit** all components required, inclusive “an **interface** to input information about properties of said light beams, wherein said interface is connected to a memory; said **memory** to store the information about the properties of said beams to be displayed; a **sequencer** to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module; said **LED driver unit** comprising a driver for each color of said LED modules able to control the intensity of light, wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module”.

Furthermore none of the applied references address the system of the claimed invention having deployed an interface connected to a memory, the memory connected to an LED driver unit, the LED driver unit connected to first terminals of LED modules, and a sequencer connected to second terminals of the LED modules.

Base claim 1 is believed to be patentable over Dowling in view of Colorado as it is respectfully suggested that the combination of these two references cannot be made without reference to Applicant's own invention. The system of base claim 1 is believed to be novel and patentable over these references because a combination of the claimed elements would not address the system of the claimed invention, providing an **integrated circuit** comprising an **interface**, a **memory**, a **sequencer**, and a **LED driver unit**, and would not be obvious to one skilled in art. Furthermore the system of

base claim 1 is believed to be novel and patentable over these references because a combination of the claimed elements would not address the arrangement of components of the claimed invention, wherein a digital interface is connected to a memory; said memory is connected to a LED driver unit, the LED driver unit is connected to first terminals of LED modules, and a sequencer is connected to second terminals of the LED modules, and would not be obvious to one skilled in art.

That is to say there must be something in the prior art or line of reasoning to suggest that the combination of these two references is desirable. We believe that there is no such basis for the combination.

Claims 3, 8, 11-15, 17-20, 22-23, and 26-29 are dependent claims upon base claim 1 which is believed to be patentable according to the arguments outlined above.

Claim 30 of the claimed invention teaches:

- 30.** (currently amended) A system for visual, electronic communication, highlighting information/events, wherein LED modules are displaying related light signals having defined properties representing said different information/events, is comprising:
- an integrated circuit comprising:
 - an interface to input information about properties of said light beams, wherein said interface is connected to a memory;
 - said memory to store the information about the properties of said signals to be displayed;
 - a sequencer to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;
 - said LED driver unit comprising a driver for each color of LED able to control the intensity of light , wherein the LED driver unit

is connected between said memory and first terminals of said arrangement of at least one LED module; and
an electrical connection between said LED driver unit and said arrangement of at least one LED module; and
said arrangement of at least one LED module.

The same arguments apply for claim 30 as outlined above for claim 1. Therefore applicant believes claim 30 to be patentable.

Claims **32, 37, 40-45, 49-51, 53-54, and 57-60** are dependent claims upon base claim **30** which is believed to be patentable according to the arguments outlined above.

The amended claim 61 discloses:

61.(currently amended) A phone system highlighting information/events, wherein LED modules are displaying related signals representing said different information/events, is comprising:
an integrated circuit comprising:
an interface to input information about properties of said light beams, wherein said interface is connected to a memory;
said memory to store the information about the properties of said signals to be displayed;
a sequencer to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;
said LED driver unit comprising a driver for each color of LED able to control the intensity of light , wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module; and
an electrical connection between said LED driver unit and said arrangement of at least one LED module; and
said arrangement of at least one LED module.

The same arguments apply for claim **61** as outlined above for claim 1. Therefore applicant believes claim **61** to be patentable.

Claims **62-63, 65, 67-70, 75, 78-84, 86-89, 91-92** and **95-98** are dependent claims upon base claim **61** which is believed to be patentable according to the arguments outlined above.

10. Reconsideration of the rejection of claims 4-7, 33-36, 71-74, 99-100, and 102-106 under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688), hereinafter Dowling, in view of Colorado (US 7,016,701) and further in view of Mueller et al. (US6,016,038), hereinafter Mueller, is requested, based on amended claims and on following remarks:

Claims **4-7, 33-36, and 71-74** are dependent claims upon base claim **1**, respective base claim **30** or base claim **61**, which are believed to be patentable according to the arguments outlined above.

The amended claim **99** of the claimed invention discloses:

- 99.** A method to establish visual, electronic communication, highlighting information/events, wherein LED modules are displaying related light signals having defined properties representing said different information/events comprising:
- providing an **integrated circuit** comprising an interface, **a memory to store the information about the properties of said signals to be displayed**, a sequencer, a LED driver unit connected to LEDs, and one or more LED modules, comprising more than one LED each;
 - determine the information to be visually highlighted;
 - define the kind of highlighting of the information selected above;
 - compose the sequencer steps according to the definitions of the two steps above;
 - if said composing software is built into a phone, store the sequences in said memory;
 - otherwise download sequences and store them in said memory; and ready for operation.

In regard of the disclosures of Dowling and Colorado the same arguments apply for claim **99** as outlined above for Claim **1**. None of the both applied references address the method of the claimed invention disclosing “providing an **integrated circuit** comprising an interface, a memory to store the information about the properties of said signals to be displayed, a sequencer, a LED driver unit connected to LEDs, and one or more LED modules”.

Mueller et al. disclose (col. 2, lines 21-37) :

“In brief, the invention herein comprises a pulse width modulated current control for an LED lighting assembly, where each current-controlled unit is uniquely addressable and capable of receiving illumination color information on a computer lighting network. In a further embodiment, the invention includes a binary tree network configuration of lighting units (nodes). In another embodiment, the present invention comprises a heat dissipating housing, made out of a heat-conductive material, for housing the lighting assembly. The heat dissipating housing contains two stacked circuit boards holding respectively the power module and the light module. The light module is adapted to be conveniently interchanged with other light modules having programmable current, and hence maximum light intensity, ratings. Other embodiments of the present invention involve novel applications for the general principles described herein.

Furthermore Mueller et al. discloses using **multiple integrated circuits** while in the claimed invention all components are integrated in **one integrated circuit** as disclosed in base claim **99**.

Mueller discloses (col. 4, lines 17-19):

“Also connected to pin connector 210 are three current programming integrated circuits, ICR 220, ICB 240 and ICG 260.”

Furthermore Mueller discloses (col. 4, 48-54)

“The red, blue and green LED currents enter another integrated circuit, IC1 380, at respective nodes 324, 344 and 364. IC1 380 is preferably a high current/voltage Darlington driver, part no. DS2003 available from the National Semiconductor Corporation, Santa Clara, Calif. IC1 380 is used as a current sink, and functions to switch current between respective LED sets and ground 390.”

Moreover Mueller discloses (col.5, lines 12-14):

“The structure and operation of microcontroller IC2 400 will now be described. Microcontroller IC2 400 is preferably a MICROCHIP brand PIC16C63,”

None of the applied references address the method of claim 99 of the claimed invention disclosing “providing an **integrated circuit** comprising an interface, a memory to store the information about the properties of said signals to be displayed, a sequencer, a LED driver unit connected to LEDs, and one or more LED modules”.

Base claim **99** is believed to be patentable over Dowling (US 2002/0070688) in view of Mueller (US 6,016,038) as it is respectfully suggested that the combination of these two references cannot be made without reference to Applicant's own invention. The method of base claim **99** is believed to be novel and patentable over these references because a combination of the claimed elements would not address the method of the claimed invention, providing an **integrated circuit** comprising an interface, a memory to store the information about the properties of said signals to be displayed, a sequencer, a LED driver unit connected to LEDs, and one or more LED modules, comprising more than one LED each; and would not be obvious to one skilled in art. That is to say there must be something in the prior art or line of reasoning to

suggest that the combination of these two references is desirable. We believe that there is no such basis for the combination.

Claims **100** and **102-106** are dependent claims upon base claim **99** which is believed to be patentable according to the arguments outlined above.

11. Reconsideration of the rejection of claims **9-10**, **38-39**, and **76-77** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and further in view of Tokimoto et al. (US 6,690,341) is requested, based on the following remarks:

Claims **9-10** are dependent claims upon base claim **1**, claims **38-39** are dependent claims upon base claim **30**, and claims **76-77** are dependent claims upon base claim **61**, all these three base claims **1**, **30** and **61** are believed to be patentable according the arguments outlined above.

12. Reconsideration of the rejection of claims **16**, **47** and **85** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and further in view of Nishimura et al. (US 2003/0013484) is requested, based on the following remarks:

Claim **16** is a dependent claim upon base claim **1**, claim **47** is a dependent claim upon base claim **30**, and claim **85** is a dependent claim upon base claim **61**, all these

three base claims **1**, **30** and **61** are believed to be patentable according the arguments outlined above.

13. Reconsideration of the rejection of claims **24-25**, **55-56** and **93-94** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and further in view of Sasaki et al. (US 6,404,139) is requested, based on the following remarks:

Claims **24-25** are dependent claims upon base claim **1**, claims **55-56** are dependent claims upon base claim **30**, and claims **93-94** are dependent claims upon base claim **61**, all these three base claims **1**, **30** and **61** are believed to be patentable according the arguments outlined above.

14. Reconsideration of the rejection of claim **64** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and further in view of view of Kitano et al. (US 2003/0216151) is requested, based on the following remarks:

Claim **64** is a dependent claim upon base claim **61**, which is believed to be patentable according the arguments outlined above.

15. Reconsideration of the rejection of claim **66** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701)

and further in view of in view of Kota et al.. (US 7,003,318) is requested, based on the following remarks:

Claim **66** is a dependent claim upon base claim **61**, which is believed to be patentable according the arguments outlined above.

16 Reconsideration of the rejection of claim **101** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and Mueller et al.(US 6,016,038) and further in view of Tokimoto et al. (US 6,690,341) is requested, based on the following remarks:

Claim **101** is a dependent claim upon base claim **99**, which is believed to be patentable according the arguments outlined above.

17. Reconsideration of the rejection of claim **107** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and Mueller et al. (US 6,016,038) and further in view of Nishimura et al. (US 2003/013484) is requested, based on amended claims and on the following remarks:

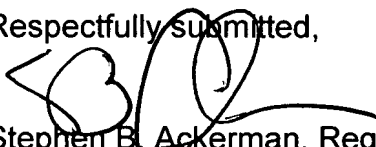
Claim **107** is a dependent claim upon base claim **99**, which is believed to be patentable according the arguments outlined above.

Furthermore it should be noted that the Examiner needed to use totally eight prior art references, as Dowling, Colorado, Mueller, Tokimoto, Nishimura, Sasaki, Kitano and Kota to find elements of the invention, and the need to rely on such a large number of prior art references is a further indication of the non-obviousness of the claimed invention.

Allowance of all Claims is requested.

It is requested that should the Examiner not find that the Claims are now Allowable that the Examiner call the undersigned at 845-452-5863 to overcome any problems preventing allowance.

Respectfully submitted,



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